

## PATENT ABSTRACTS OF JAPAN

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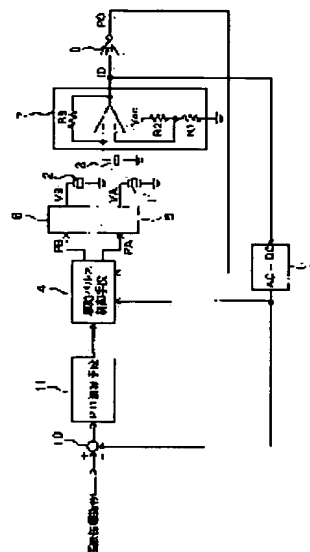
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## (54) CONTROLLER FOR VIBRATION TYPE ACTUATOR

(57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a controller capable of controlling the drive of a vibration type actuator at high speed, and preventing sudden stop during its driving.

**SOLUTION:** An output proportional to vibration speed detected by a piezoelectric element 3 is detected by an amplifier 7, and phase information of the vibration speed obtained by an inverter 8 is converted into vibration amplitude of a vibration body by an AC/DC converting means 9 so as to be compared with a vibration amplitude command. The output signal of the PID computing means 11 becomes large at the beginning of startup, and the signal in a phase delayed from the phase (A-A') of the output signal of the inverter 8 is generated in a drive pulse controlling means 4 by time equal to a value obtained by subtracting a value corresponding to a predetermined time T1 from the output of the PID computing means 11. Because the output signal of the inverter 8 is outputted as it is when the result obtained by subtracting the time T1 is positive, excitation is performed in the phase of the output signal of the inverter 8 when a difference between target vibration amplitude and actual vibration amplitude is large, thereby increasing the vibration amplitude at high speed.



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